

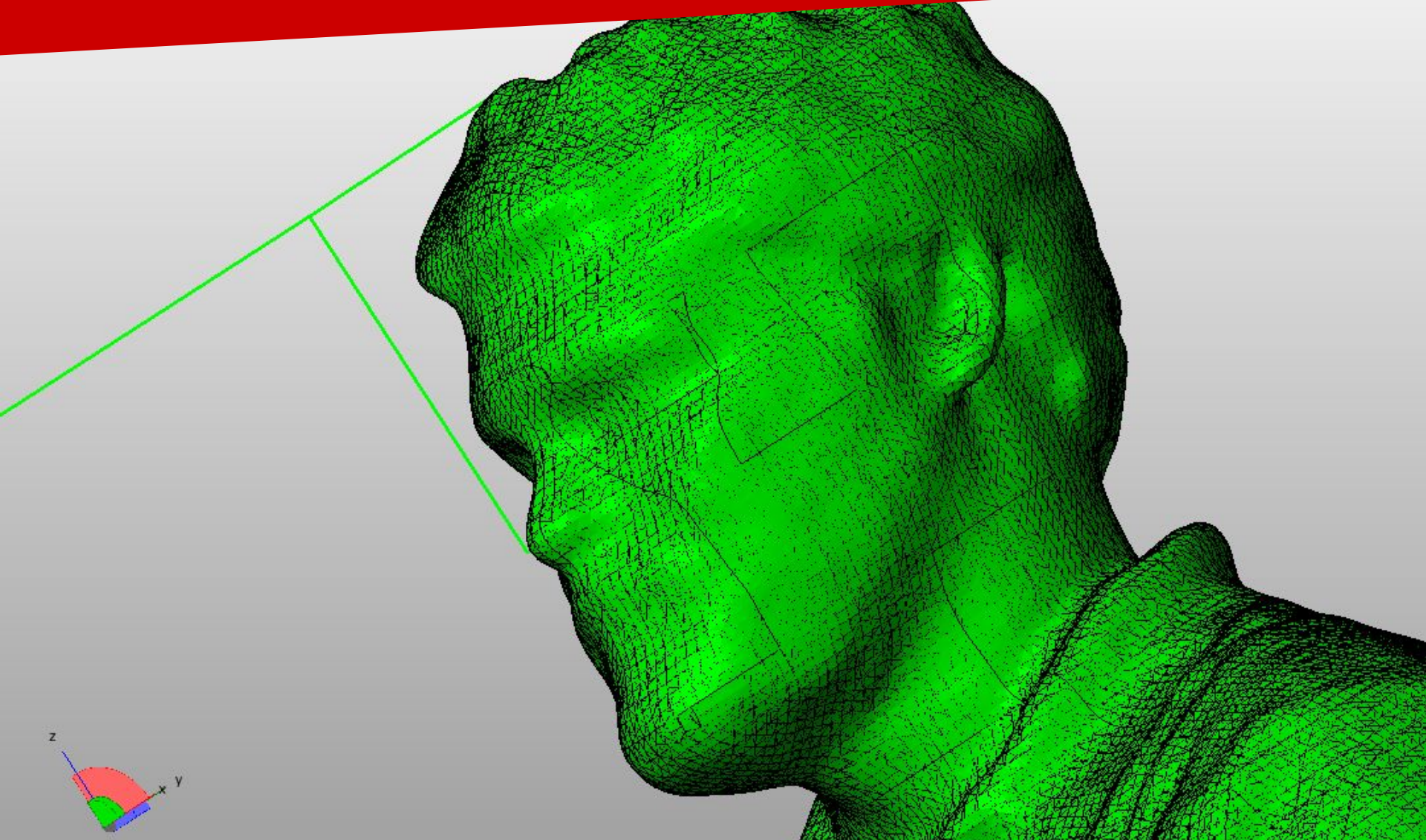
Getting Started With 3D Scanning



Agenda

1. What is 3d Scanning?
2. Types of 3d Scanning
3. Available scanners at NCSU Libraries.
4. Brief Meshmixer Tutorial (post-scan model processing)
5. Get a good idea of the limits of our scanners
6. Practice scanning!

Physical to Digital (3D Files)



Types of Scanning/ Data Capture

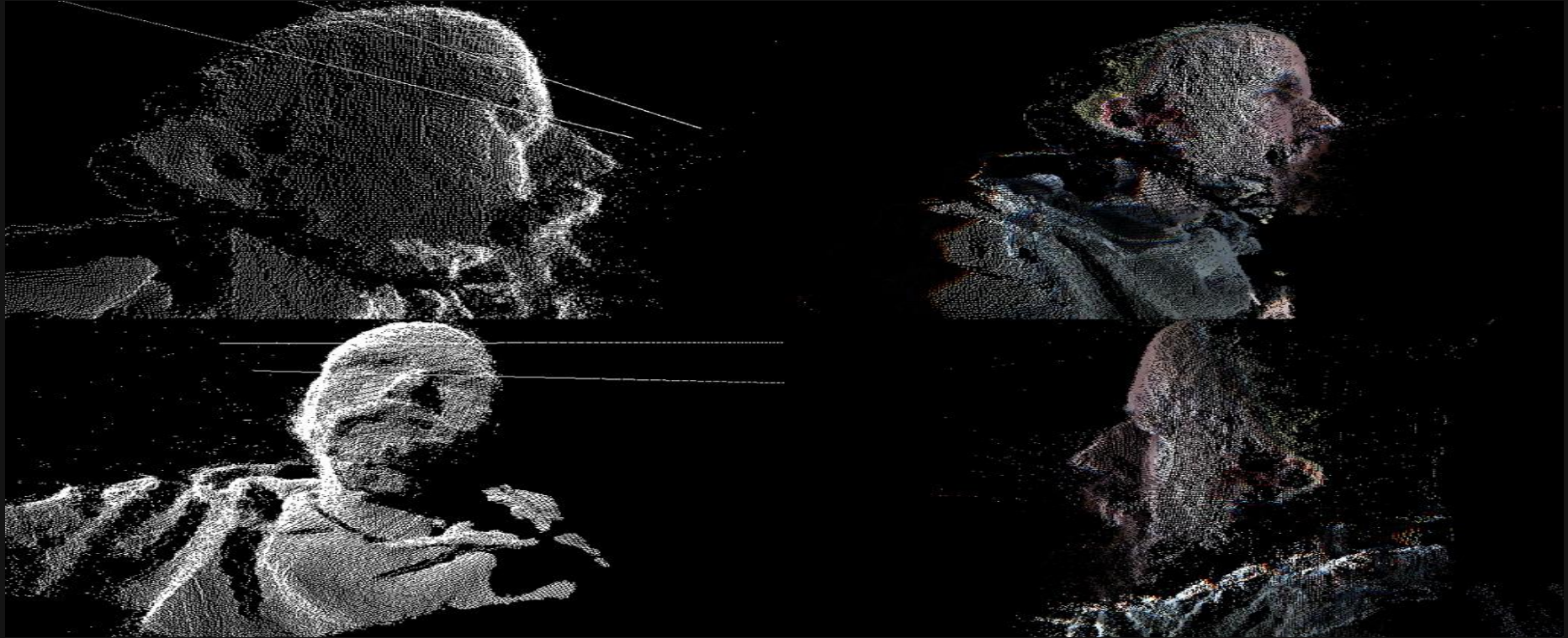
- Laser Scanning
- Structured Light Scanning
- Infrared
- Photogrammetry

Laser 3d Scanning



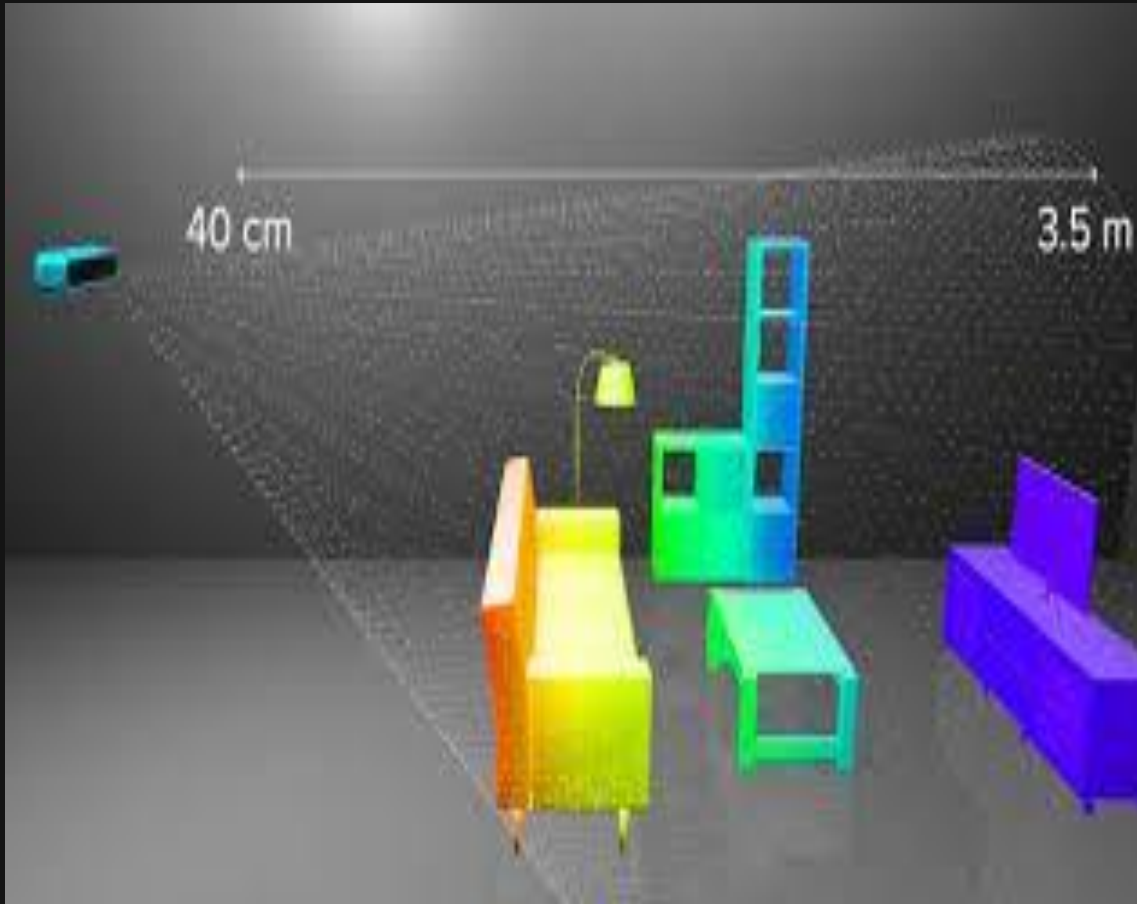
- The Next Engine and Matter and FOrm scanners use this technique
- A laser line sweeps across the objects and reflects back to a camera
- Creates a point cloud that can be edited or printed

Point Clouds



- Point Cloud- set of data points in a coordinate system
- These points give our model its 'shape'

Infrared



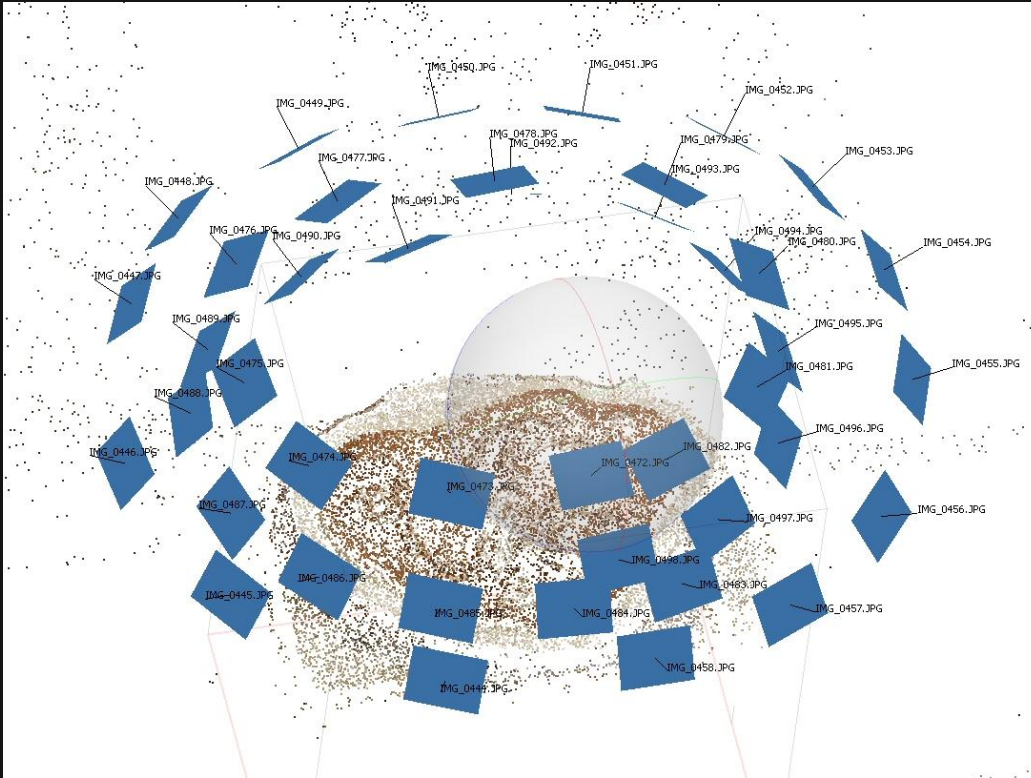
- The Structure Scanner uses this technique
- Functions Similarly to the laser scanner
- Infrared signal is sent
- Sensor picks up the reflection

Structured Light



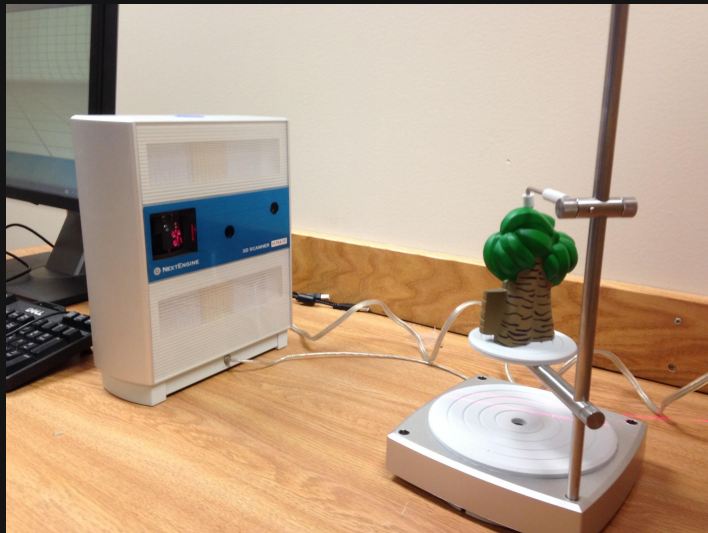
- Uses projected light to create stripe or checkerboard patterns
- A camera sensor measures the distortion of the pattern

Photogrammetry

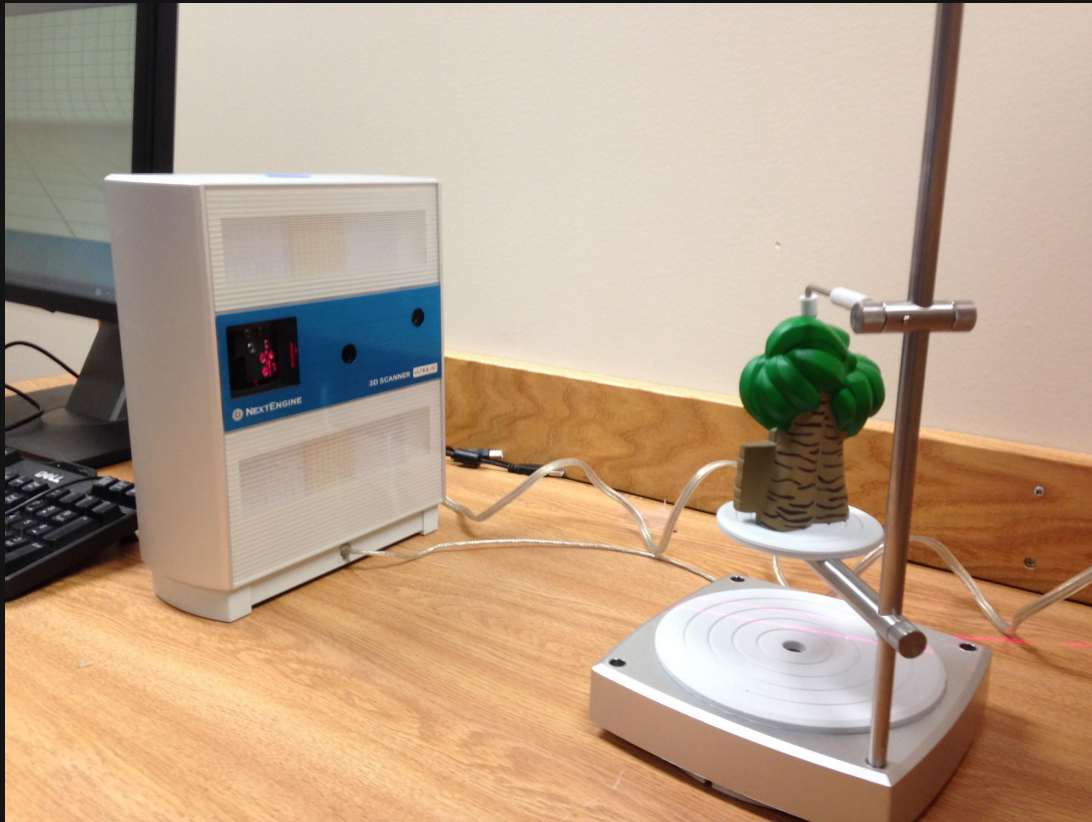


- Using multiple photographs to map distances and create the point cloud/model
- Agisoft Photoscan
- Another workshop later in the semester

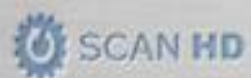
Our Scanners



Next Engine 3d Scanner



- Laser Scanner
- Good for smaller, slightly complex models
- Doesn't do well with shiny objects
- Black and Red can be difficult colors to scan.



BACK

MODEL 3D_Scan_41



TURN



START

SCAN FAMILY

AUTO ☐ MULTI ☒ DRIVE

POSITIONING



360



BRACKET



SINGLE

DIVISIONS

8

POINTS / IN.²

160k

QUICK

SD

HD

TARGET

DARK

NEUTRAL

LIGHT

RANGE

MACRO

WIDE

EXTENDED



6"

6.5"

9"

MIN

IDEAL

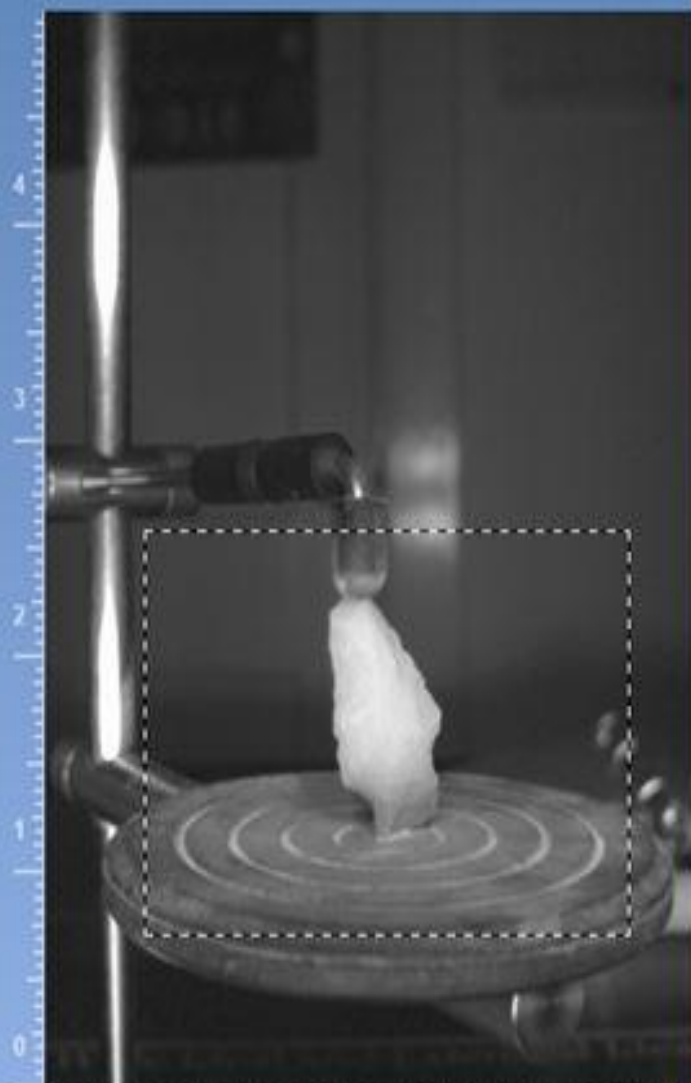
MAX

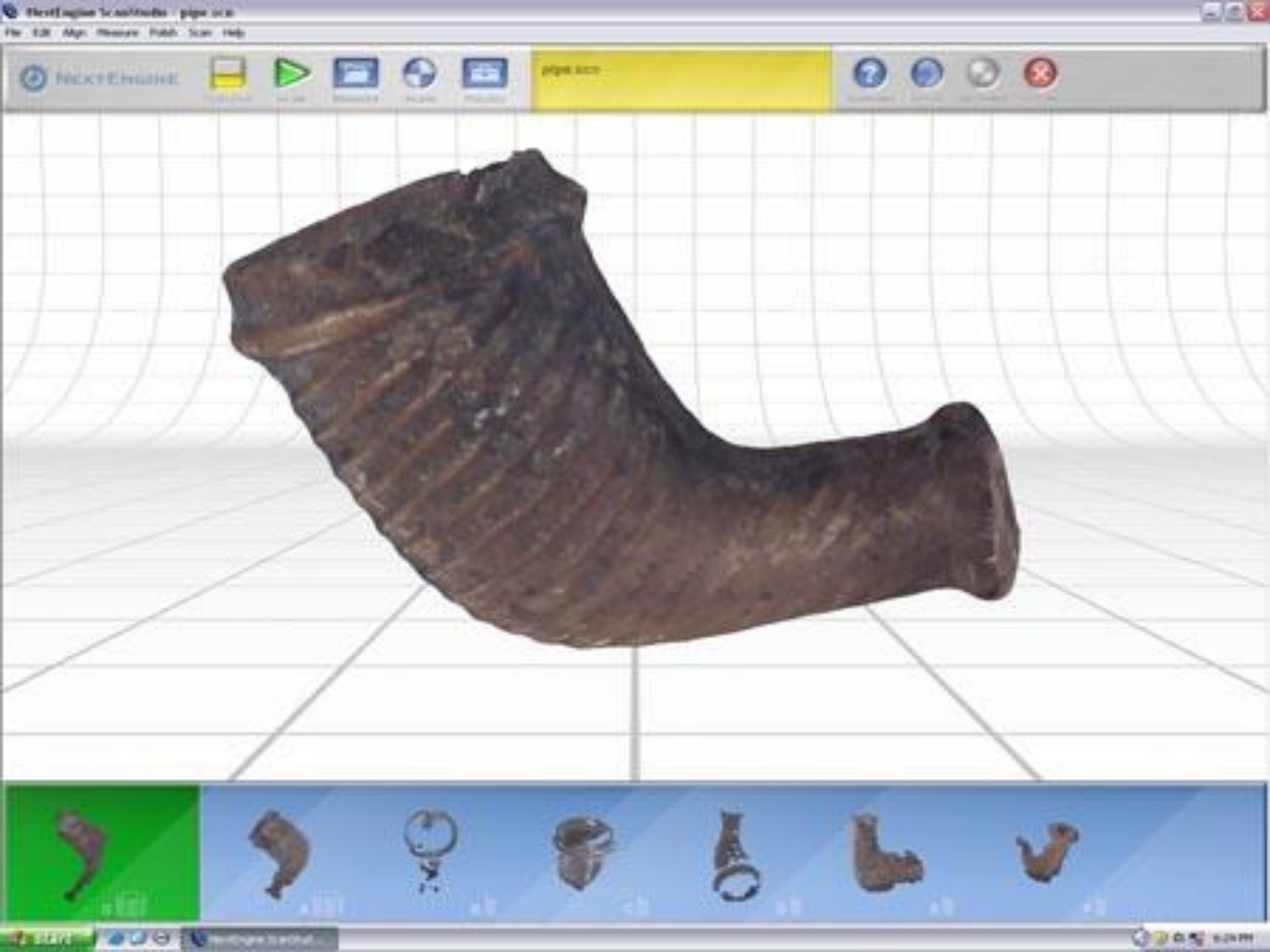
TIME

29 M

MEMORY

100 %





Matter and Form 3d Scanner



- Laser Scanner
- Good for scanning small simple items.
- Does not do well with more complex or shiny items.
- Black and Red can be difficult colors to scan.

MATTER *and* FORM



New Scan



Calibrate



Scan Viewer



Help

Recent Scans

You have no recent scans.



Home

Object Colour



Single-Coloured

Choose this if the object has one colour, or has similar shades of one colour.



Multi-Coloured

Choose this if the object has more than one colour, especially if the colours are contrasting.

Or for advanced users
select your own settings

[Advanced](#)



Home



Pause



Finish



Help



Structure 3d Scanner



- Infrared Scanner
- Good for scanning human heads, human bodies and larger objects or rooms
- Not good for really complex objects or smaller objects

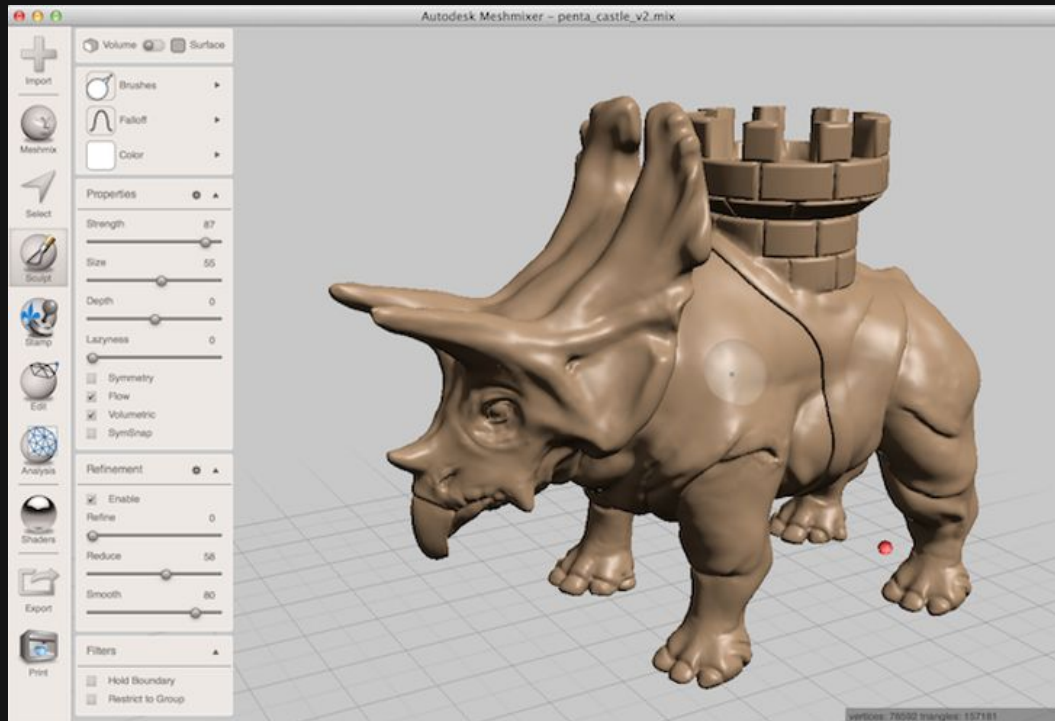


STBUSTERS



Done

Meshmixer Post Processing



- Patch holes
- Check a model for problems
- Get a scan print ready

Let's Scan!

Thanks for coming!

www.lib.ncsu.edu

Scanning Obama!

